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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,169	02/14/2001	Shoji Hara	010164	2107

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ARMSTRONG, WESTERMAN & HATTORI, LLP
1725 K STREET, NW
SUITE 1000
WASHINGTON, DC 20006

EXAMINER

TALBOT, BRIAN K

ART UNIT PAPER NUMBER

1762

DATE MAILED: 02/24/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/782,169

Applicant(s)

HARA ET AL.

Examiner

Brian K Talbot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/30/03 has been entered.
2. The amendment filed 1/30/03 has been considered and entered. The non-entered amendment filed 12/30/02 has been entered per filing a request for continued examination under 37 CFR 1.114. Claims 14-16 have been canceled. Claims 17 and 18 have been added. Claims 1-13, 17 and 18 remain in the application.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. The Declaration filed 1/30/03 has been noted and considered.

Claim Rejections - 35 USC § 103

5. Claims 1-13,17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (5,156,710) or Shiotani et al. (5,741,598) in combination with Ameen et al. (5,681,443).

Chen et al. (5,156,710) or Shiotani et al. (5,741,598) or JP 62-60640 teach applying a metal layer to a polyimide layer and heating to form a conductor layer atop the polyimide layer. The polyimide layer is formed by imidizing a polyamic acid. The metal layer can be applied by a variety of ways but laminating a metal foil is most preferred. Shiotani et al. (5,741,598) further teaches that it is conventional in the art to form the metal layer atop the polyimide film by plating (col. 1, lines 27-30)

Chen et al. (5,156,710) or Shiotani et al. (5,741,598) fail to teach a dry plating method and subsequent wet plating method to build up the conductor.

Ameen et al. (5,681,443) teaches forming printed circuits whereby a metal flash layer is applied to a polymer substrate by vapor deposition or sputtering and subsequently a metal layer is applied to the flash metal by electrodeposition.

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified Chen et al. (5,156,710) or Shiotani et al. (5,741,598) process by forming the conductor layer as evidenced by Ameen et al. (5,681,443) with the expectation of achieving similar results.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11,13,17 and 18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 62-60640.

JP 62-60640 teaches sputtering or vapor depositing a metal atop a thermoplastic polyimide sheet and heating to form the laminated film. The metal can be copper.

Claim Rejections - 35 USC § 103

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 62-60640 in combination with Ameen et al. (5,681,443).

JP 62-60640 fails to teach wet coating a metal atop the dry coated metal.

Ameen et al. (5,681,443) teaches forming printed circuits whereby a metal flash layer is applied to a polymer substrate by vapor deposition or sputtering and subsequently a metal layer is applied to the flash metal by electrodeposition.

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Therefore it would have been within the skill of one practicing in the art to have modified JP 62-60640 by forming a second metal coating by wet plating as evidenced by Ameen et al. (5,681,443) with the expectation of achieving success, i.e. a thicker coating.

Response to Arguments

7. Applicant's arguments filed 1/30/03 have been fully considered but they are not persuasive.

Applicant argued that the prior art teaches "laminating a pre-formed" metal film and not "forming" the conductive film.

The Examiner agrees in part. While this is the case, the Examiner has applied a combination rejection citing Ameen et al. (5,681,443) to show the conventionality of forming a conductive layer atop a polyimide substrate (col. 10, lines 15-50). Furthermore, Shiotani et al. (5,741,598) teaches that it is conventional in the art to form the metal layer atop the polyimide film by a plating process (col. 1, lines 27-30). Chen et al. teaches that the polyimide is a thermoplastic polyimide. Additionally, newly cited JP 62-60640 clearly teaches "forming" the metal layer and not laminating a pre-formed layer to a thermoplastic polyimide.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Talbot whose telephone number is (703) 305-3775. The examiner can normally be reached on Tuesday-Friday 6AM-4PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-6078 for regular communications and (703) 872-9765 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3775.



Brian K Talbot
Primary Examiner
Art Unit 1762

BKT
February 21, 2003